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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,197	10/17/2003	Osamu Aso	KAWAW34.001CP1	6665
20995	7590	08/31/2005	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			LEE, JOHN D	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/688,197

Applicant(s)

ASO ET AL.

Examiner

John D. Lee

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RM

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/750,535.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0204.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. §§ 119(a)-(d). The certified copies have been filed in parent Application No. 09/750,535, filed on December 28, 2000. Applicant is required to submit a certified English translation of the foreign priority papers in accordance with 37 CFR § 1.55. This is important in order to verify the earliest date to which applicant is entitled for the purpose of identifying potential references against the claims of the present application. It is noted that the terminology "DFG" or "difference frequency generation" does not appear in applicant's parent U.S. Application, and the Examiner needs to know if the relied upon foreign priority documents provide support for such terminology.

The abstract of the disclosure is objected to because it appears to be directed more toward the invention of parent Application No. 09/750,535, filed on December 28, 2000, than toward the invention of the present application. It is noted that difference frequency generation (DFG), the essential mechanism of the present application, is only mentioned at the end of the abstract, whereas four-wave mixing (FWM), which was the essential mechanism in the parent application and is not a part of this application, is the primary theme of the abstract as presented. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following minor informality: on page 1, the reference to parent Application No. 09/750,535 should reflect that it is now U.S. Patent 6,665,113. Appropriate correction is required. Applicant's cooperation is requested in correcting any other errors of which applicant may become aware in the specification.

Claims 1-3, 8-10, 12, and 14 are objected to because of the following informalities: In claim 1, line 1, "different" should be "difference". In claim 1, last line, the word "lightwaves" should be inserted after "filtered". In claim 2, line 2, and in claim 3, line 2, "element" should be "medium". In claim 3, line 1, "higher" should be "high". In claim 8, line 1, "claims" should be "claim". In claim 9, lines 4 and 6, "wavelength" should be "wavelengths". In claim 10, line 3, "and" should be deleted. In claim 12, line 7, "wavelength" should be "wavelengths". In claim 12, line 8, "and" should be deleted. In claim 14, line 8, "portions" should be "portion". Appropriate correction is required.

Claims 1-14 are allowable over the prior art of record. The prior art, discussed below, does not disclose or reasonably suggest a wavelength converter for wavelength division multiplexed lightwave channels which utilizes difference frequency generation (DFG) and which includes a *broadband multi-channel simultaneous wavelength conversion portion*. U.S. Patent 5,946,129 to Xu et al, deemed to be the closest prior art, does not include such a *broadband multi-channel simultaneous wavelength conversion portion*.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. As mentioned above, U.S. Patent 5,946,129 to Xu et al is deemed to be the closest prior art of record. Xu et al (cited by applicant on the attached form PTO-1449) discloses a wavelength converter for wavelength division multiplexed lightwave channels which utilizes difference frequency generation (DFG). See Figures 5-7, for example. The optically nonlinear difference frequency generation (DFG) element, however, is individual wavelength based and is not a *broadband multi-channel*

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*simultaneous wavelength converter*. U.S. Patent 6,801,355 to Sher et al describes another wavelength converter for wavelength division multiplexed lightwave channels which utilizes difference frequency generation (DFG). U.S. Patent 6,665,113 to Aso et al has matured from applicant's parent Application No. 09/750,535, filed on December 28, 2000.

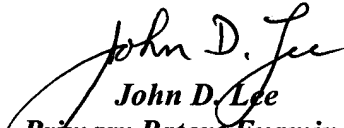
This application is in condition for allowance except for the formal matters relating to the abstract, disclosure, claims, and requirement for translation of the priority papers as outlined above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213. Prosecution may be reopened by the Examiner if the translation of the priority papers affects applicant's effective filing date and if intervening references are found.

A shortened statutory period for reply to this action is set to expire **TWO (2) MONTHS** from the mailing date of this letter.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. §§ 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**